

THE

BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. LXXII.

THURSDAY, MARCH 2, 1865.

No. 5.

CONVERGENT STRABISMUS A SYMPTOM AND NOT A PRIMARY AFFECTION.

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[Read before the Boston Society for Medical Improvement, Feb. 13th, 1865, and communicated for the Boston Medical and Surgical Journal.]

J. C., æt. 18, consulted me Dec. 19th of the past year, desiring to be relieved of a cast in the right eye.

It was observed that the patient opened neither eye to its full extent, but kept the lids quite close together, so as to cover up a large portion of the pupil. The right eye converged rather more than 3" (three lines), and was found to be inferior in vision to the other, comparing with it numerically as $\frac{1}{16}$ to $\frac{2}{3}$. The half-closed lids, of course, materially altered the patient's natural expression.

I have brought up this case in order to draw attention to a fact which my experience shows me to be as yet very little acted upon in this country, namely, that convergent strabismus is, in the very large majority of cases, a symptom rather than a disease; and that operative interference, if not followed by other measures, is very often productive of only temporary relief.

The modern view advanced by Donders, and amply supported by facts, is in brief this: that convergent strabismus occurs generally in eyes of low refractive power, and is itself the legitimate result of the increased effort naturally made by such eyes to adapt themselves to near objects.

We meet in the eye three states of refraction.

1st. *Normal*.—Parallel rays are brought to a focus on the retina without action or effort.

2d. *Increased*.—Owing in general to the length of the eye, parallel rays are brought to a focus before reaching the retina. This condition is known as myopia, and is relieved by the interposition of a concave glass.

3d. *Diminished*.—Owing to the shortness of the eye, parallel rays meet the retina before coming to a focus, and produce an indistinct

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image, unless altered in their course either by the interposition of a convex glass, or by an increase in the convexity of the crystalline. This condition is known as over-sight or hypermetropia. Hardly recognized till within six years, it has been found to be even more common than myopia, and to be one of the chief causes of inability to use the eye for any length of time on near objects.

This diminished refraction of the eye then, known as hypermetropia, has been proved to be the most frequent cause of convergent strabismus. Donders found it in more than 77 per cent. of the large number of cases he investigated. He says: "Hypermetropia is the primary anomaly, caused by the structure of and peculiar to the eye; strabismus is the secondary condition, resulting some years after birth."

The explanation is brief. Bearing in mind that in the case of the normal eye distant objects are seen without effort, that is that parallel rays are brought unaided to a union on the retina, the hypermetropic patient is obliged to use a portion of the adaptive power (technically known as the accommodation) in order to accomplish the same result. And as he, under these circumstances, uses a certain amount of his accommodation, and a normal eye does not; so in looking at near objects he must make a proportionately greater effort than the normal eye is obliged to do. He is thus always forced to use an inordinate amount of accommodation, especially great on near objects. Now there is a certain well-established connection between accommodation and convergence of the axes of vision. The greater the convergence, the more accommodation can be brought into play. But, if the convergence be carried beyond a certain point, double vision ensues. This occurs with the hypermetropic patient, who is thus obliged to choose between imperfect vision and squinting in order to evade the double images, and naturally chooses the latter.

It is not of course maintained that strabismus is an inevitable result of this anomaly of refraction, or that it even occurs in the majority of cases. The instinctive tendency to binocular vision is so great, the desire of fusing into one harmonious whole the image formed by each eye so natural, that distinctness and accuracy of perception are made to give way; unless—in the individual case—circumstances be present which either render binocular vision of less account or convergence unusually easy. The limits of this paper allow only a passing allusion to these facts.

It is useless, then, to relieve the deformity without attacking the cause—in other words, neutralizing the hypermetropia by ordering a proper convex glass. The strongest glass with which distant objects are distinctly seen should be selected and worn.

If, on the first trial, no convex glass can be borne, it should be remembered that hypermetropia may be *latent*, that is, present, but effectually disguised by the strain brought to bear on the accommo-

dation. The instillation of atropine paralyzes the latter and exhibits the true state of the refraction.

In the case under consideration, it was found that the patient was able to see distant objects with a convex glass of 18 inch radius. A slightly weaker glass was at first selected, and the internal rectus of the right eye carefully loosened from its insertion in the usual manner. He was directed to commence the use of the glass the same day. Ten days later the internus of the other eye was operated on, and a glass of the full strength given. This he now wears constantly and for all purposes. Both eyes are now opened to the full extent, vision is decidedly improved—as regards the absence of effort and the more natural appearance of things in general, all trace of strabismus has vanished, and the fact that prismatic glasses produce double vision proves that both eyes are now used together. The cure is complete.

This case is but one of several recently operated on and treated in this manner with entire success, and is cited to illustrate the principle involved.

DR. A. E. BECKER'S PRIZE ESSAY ON GUN-SHOT WOUNDS.

[Continued from page 79.]

CHAPTER III.

Wounds of the Head and Face.

GUTHRIE has said, with truth, that "injuries of the head affecting the brain are difficult of distinction, doubtful in character, treacherous in their course, and, for the most part, fatal in their results." There is no accident which the surgeon takes charge of with more fear and hesitation; for while in some cases death follows the most trivial injury, in others a vast amount of destruction, and even the removal of brain substance, cause but little disturbance. As Liston says, "no injury of the head is too slight to be despised, or too severe to be despaired of."

The injury inflicted by a ball striking the skull, depends chiefly on the angle at which it strikes, and its velocity. If the angle be very oblique, and the ball somewhat "spent," the injury may be very trivial. Stromeyer asserts that the danger from such a grazing shot arises mostly from pyæmia. Inflammation of the bone following the injury, the veins of the diploe become implicated, and thus pus enters the system. Instances have been related in which the effect of such a grazing shot has been to rupture the vessels between the skull and the dura mater. If the force be greater, the pericranium may be injured to a greater or less extent, in one or other of its tables separately, the fracture of the inner sometimes taking place, while the outer remains to all appearance intact. Lastly, the brain may be injured as well as its case; 1st, by what, as John Bell

says, "we choose to express our ignorance of by calling it a concussion," which may pass away doing little or no harm, or may sooner or later result in encephalic inflammation, and compression from effusion; 2d, by such comminution of the skull as shall cause spicula to be thrown into the brain; and, 3d, by direct perforation.

Macleod relates a case, which occurred at the Alma, to show how completely the skull may be destroyed by a glancing shot, without the scalp being implicated. "A round shot, *'en ricochet,'* struck the scale from an officer's shoulder, and merely grazed his head as it ascended. Death was instantaneous. The scalp was found to be almost uninjured; but so completely smashed was the skull that its fragments rattled within the scalp, as if loose in a bag."

At a stated meeting of the "United States Army Medical and Surgical Society" of Baltimore, Feb. 19th, 1863, Dr. Geo. W. Dare, Act. Ass't Surgeon U.S.A., related a very remarkable case, where a soldier, having received a perforating wound of the skull, lived for *two months*, the ball remaining in the brain during that time. "Corporal G. W. Stone, Co. A, 12th Mass. Reg't, aged 29, wounded at the battle of Fredericksburg, Dec. 12th, 1862, was admitted into the General Hospital Dec. 19th, 1862. His right eye had been destroyed, as he stated, by a glancing shot. The lower lid was slit to a small extent; the eye was suppurating. He did not complain of much pain. The functions of the other eye were not disturbed, but it was observed to be unnaturally prominent. There were no brain symptoms, except some headache. Neither the patient nor the surgeon suspected that the ball remained in. The wound healed kindly, within the ordinary time. After two or three weeks, the man went out habitually on pass, through the city. He continued well, with the exception of an occasional pain over the remaining eye, until Feb. 6th, 1863, when he was found by Dr. D. in bed, having had a chill followed by fever. The fever assumed a continued form, with occasional chilliness. He remained cheerful, sitting up at times, and did not manifest any serious symptoms until the night of Feb. 10th, when he became delirious. The nurse then reported that he had wandered a little during the two preceding nights, but during the day he had appeared perfectly sensible. Feb. 11th, he was found comatose; the left pupil greatly dilated; intelligence not entirely abolished; he would sometimes answer a question, or put out his tongue when ordered; the vesical sphincter had become involuntarily relaxed. Cupping and blistering were employed without benefit. He sank rapidly, and died about 12 o'clock that night.

"An autopsy was held on the following day. Upon removal of the calvaria, the pia mater was found much congested, and a considerable quantity of dark fluid blood escaped from the torcular herophili. When the anterior cerebral lobes were lifted, a Minié ball was seen lying transversely, half embedded in the sphenoid bone, between its greater and lesser alæ, the concave extremity half way between the

crista galli and the sella turcica. A portion of the ball rested against and pressed on the thin inner wall of the left orbit, thus diminishing its capacity, and forcing forwards the eye. The missile had, after passing through the eye, entered the cranium, through the inner wall of the right orbit, at the junction of the sphenoid and ethmoid bones. The ball did not penetrate the dura mater, but remained in contact with, and pressing against it. In consequence of this pressure, ulceration of that membrane resulted, and an abscess formed, extending from the point of contact to the left lateral ventricle, containing several drachms of pus. A few drops of pus, apparently encysted by lymph, were discovered pressing directly the commissure of the optic nerve, which was the probable cause of the extreme dilatation of the pupil. The pons Varolii and the medulla oblongata were found bathed in pus."

I have deferred speaking of wounds of the head causing depression of bone, because I wished, in connection with this subject, to say a few words in regard to the use of the trephine.

In a large proportion of gun-shot wounds of the head, more or less depression of bone is caused. In such a case the question is, what to do. Quesney says, "We should always trephine in wounds of the head caused by firearms, although the skull be not fractured." "All the best practitioners," says Pott, "have always agreed in acknowledging the necessity of perforating the skull, in the case of a severe stroke made on it by gun-shot, upon the appearance of any threatening symptom, even though the bone should not be broken; and very good practice it is." This they would do to relieve compression. But in the first place, we must remember that the brain will often accommodate itself to a considerable amount of depression of bone; and, secondly, that compression caused by the formation of pus consequent to the injury, can rarely if ever be relieved by trephining. The position of the pus cannot be calculated with any degree of accuracy; and few surgeons would care to follow the example of Dupuytren, in his celebrated thrust; fewer still, at the present day, would follow Heister's directions: "Sometimes," he says, "it is impossible to discover the particular part of the cranium which is injured; the patient in the meantime being afflicted with the most urgent and dangerous symptoms. In these cases, it will be necessary to trepan first on the right side, then on the left side of the head, afterwards upon the forehead, and lastly upon the occiput; and so *all around*, until you meet with the seat of the disorder." Moreover, there are numerous instances on record, where men with depressed fractures of the skull from gun-shot wounds have recovered, under circumstances which forbade any attention being paid to them—as on retreats and forced marches. Larrey, Guthrie and Ballingall recount many such instances. And Dease long ago recorded the observation, that "those patients who neglected all precepts, and lived as they pleased, did just as well as those who re-

ceived the utmost attention." Thus it would appear that all the fatigues and privations of rapid movements in the field are less injurious to men with depressed fracture of the skull, than the probing, picking and trephining of the faculty.

If the bone be very deeply depressed, and the patient comatose, with stertorous breathing, slow pulse and dilated pupil, then it will be advisable to use the elevator cautiously, with or without the aid of Hey's saw. Otherwise, it does not seem to me that any operative interference should be attempted. The operation of trephining is in itself too dangerous to be lightly resorted to—certainly not as a prophylactic.

Injury of the skull, followed at a late date by compression, is, perhaps, the most hopeless of all the circumstances in which the trephine can be used; yet it seems that in which it is most properly employed. As John Bell says, "It is plainly an abscess of the brain; and as it is an abscess which cannot burst and relieve itself, though the trepan may fail to relieve the patient, yet without that help he will infallibly die." It is, in fact, in these cases, *un dernier ressort*.

In the examination of gun-shot wounds of the head, the finger forms the best probe, and even that should be used with much caution. If the ball be lodged in the brain, it should, of course, be removed if possible. Any pieces of bone which are detached and lying on the brain, or which have been driven into it, should be removed with the greatest care, to cause as little disturbance as possible. Cold locally, perfect quiet, low diet, and (if dangerous symptoms make their appearance) purgatives, and bleeding freely repeated, will prove the most useful means of treating such cases. The after-treatment is of the utmost importance. Relapses may occur long after the patient is apparently out of danger, and often from comparatively slight causes. Alcoholic stimuli, retained evacuations, and irregularities of food, are perhaps the most prolific causes.

Wounds of the face are chiefly to be regretted on account of the deformity and disfigurement resulting therefrom. The extreme vascularity of the tissues of the face endows them with a vitality which rectifies most injuries with a rapidity truly marvellous; and from their great distensibility the surgeon is enabled to repair loss of tissue, even when this has been very extensive. The face has been wounded in almost every part and direction, and often presents a most ghastly appearance. The upper and lower jaws, respectively, have frequently been, to a greater or less extent, destroyed, and yet speedy recovery follow. At the battle of Antietam, a soldier had both eyes destroyed by one ball, which passed through the bridge of the nose, leaving a clean hole. He suffered but little pain, and made a rapid recovery.

Hæmorrhage is undoubtedly the greatest source of danger in gun-shot wounds of the face; and, from the great difficulty of commanding it, frequently places the patient in imminent danger. Those

who have received a severe face wound, seldom leave the field without sustaining a considerable loss of blood; and secondary hæmorrhage is common when the bones have been fractured. The irregularity and extreme vascularity of the parts render the application of ligatures to the bleeding points difficult; and to be effectual, compresses must be applied with much nicety. In secondary hæmorrhage of the deep branches of the face, ligature of the main artery will generally be necessary.

The branches of the facial nerve are sometimes so much injured in face wounds, either by the ball itself or by spicula of bone, that temporary or even permanent paralysis may ensue.

The greatest care should always be taken to remove the secretions which result from injury of the bones of the face. For if any amount of it should be swallowed, and thus enter the stomach, much constitutional disturbance will follow, and a fever of a low typhoid and very fatal type will be induced.

Fractures of the bones of the face form an exception to the general rule, of removing fragments which are nearly detached. The large supply of blood in this region frequently enables pieces of bone—whose direction is not opposed to a proper union—to resume their full connection, in a manner which would be impossible in other parts under the same relative circumstances.

The curious manner in which balls may be concealed in the bones of the face, and be discharged of their own accord, is shown in an instance which occurred at the Alma, and is related by Macleod. "A round ball had entered close to, but below, the inner canthus of the eye, and being lost was not further thought of. The wound healed, and the patient had almost forgotten the circumstance, when, after suffering slightly from dryness in the nostril, the ball fell from his nose, to his great alarm and astonishment, several months afterwards." This case is singular, from the absence of the foetid discharge which usually attends such injuries of bones, with a retained ball.

CHAPTER IV.

Wounds of the Chest, Abdomen and Bladder.

Wounds of the thorax are very apt to occur in battle, when the combatants are at close quarters. This is to be seen during sieges and street fights. Simple contusion of the walls may be caused by a spent ball, or by a ball which has struck some part of a soldier's accoutrements, or some strong object in the pocket, and has thus been prevented from entering. A case occurred in our army some months since, where an officer was knocked down, but without sustaining any injury; and on examination, he found a rifle-ball embedded in his watch. Such an injury, however, may be so severe as to cause hæmoptysis, severe constitutional shock, and internal inflammation, even though not accompanied by fracture. If the ball strike the edge of any metal plates which form part of a soldier's accoutre-

ments, the part so struck may inflict the injury on the internal organs. Macleod quotes a case from the unpublished records of the English Medical Department, of a soldier "who was hit at Sadoola-pore by a round shot on the edge of the breast-plate, which was so turned inwards as to fracture the cartilages of the 5th, 6th and 7th ribs, on the left side, close to the sternum. The skin was not wounded. He walked to the rear, and complained but little for two hours, when he was seized with an acute pain in the region of the heart. His pulse became much accelerated, and he grew faint and collapsed. A distinct and sharp bellows sound accompanied the heart's action. He died in seventy-two (72) hours from the receipt of the injury—the pain and dyspnoea, which had been so urgent at first, having abated for some hours before death. The heart was found to have been ruptured to an extent sufficient to allow of the finger being thrust into the left ventricle. The obliquity of the opening had prevented the blood from escaping into the pericardium, which contained about two (2) ounces of dark-colored serum."

It occasionally happens that a ball is arrested between two ribs. I again avail myself of Dr. Macleod's experience for an illustration. A soldier was wounded by "a large conical ball with a broad base, which was much spent when it struck him. It did not force itself into the cavity, but lay wedged between the cartilages of the 2d and 3d ribs, on the left side, about an inch from the sternum. On withdrawing the ball, the cavity of the chest was found to be fairly opened, and the lung was visible as it expanded and contracted. He had a severe attack of pleurisy a few days afterwards. For five weeks the wound continued to suppurate freely. The lung became adherent to the parietes. The patient made a good recovery."

Fragments of shell not unfrequently open the cavity, but spare the lung; while sometimes the reverse happens, the lung being injured without the pleural sac being opened. It is a singular fact connected with wounds of the thorax, that an intercostal artery is seldom opened.

If the heart or great vessels are wounded, death will almost invariably be instantaneous. A remarkable exception to this rule came under the care of Dr. J. M. Carnochan, of New York. Bill Poole, the noted pugilist of that city, received a wound from a pistol in a fray. Dr. Carnochan was satisfied, on examination, that the ball had entered the heart. The patient, however, did well. About a week or ten days after, he was imprudent enough to see some friends, became excited, and very shortly expired. On *post-mortem* examination, the ball was found embedded in the muscular tissue of the heart.

The dangers which attend a penetrating wound of the lung are, primarily, hæmorrhage and collapse, as well as those arising from suffocation, if the bleeding be profuse. Secondly, from inflammation and its results, exhausting suppuration and exfoliation, and from

the organic diseases that are thereby so apt to be engendered. The collapse which follows these wounds, though dangerous, is the best guarantee for the patient's safety, if not too profound and prolonged.

Balls are well known occasionally to remain embedded in the lung, and become encysted, giving rise to a very slight amount of irritation.

The finger is by far the best probe in examining wounds of the thorax, as in all others, where the wound is not too deep. Fragments of bone and clothing should, of course, be removed with all care; and if the ribs are broken they should be fixed by strips of adhesive plaster, passed from the spine to the sternum, and from above downwards, so as to embrace the wounded side only.

The usual treatment of these cases consists in leaving the wound open, applying light water-dressings, and pursuing, with great vigilance, the antiphlogistic treatment throughout. But in the *New York Medical Times* of Oct. 3d, 1863, pp. 156-7, I find an article by Dr. B. Howard, Ass't Surg. U.S.A., proposing a new treatment, which, if justified by experience, will far surpass the old system. He says: "The custom of leaving the wound open is objectionable, because it affords a means of outflow as fast as the effused blood reaches its level, and thus favors the continuance of *hemorrhage*. It allows the full force of atmospheric pressure upon the entire surface of the lungs, and thus necessitates *dyspnœa*. It admits continually renewed currents of atmospheric air, ensuring decomposition of the clot in the pleural cavity, with extensive and profuse *suppuration*, of a very fetid character, while it does not provide for its exit, until after so great an amount has accumulated as to cause it to rise above the level of the wound; and after its partial subsidence by overflow, the wound again ceases to be available.

"Suppose, however, that the wound be perfectly closed, the following will at once appear among the advantages to be gained. 1st, *hemorrhage* is controlled. At the worst, the amount of blood lost after the operation cannot be more than would suffice to fill up the unoccupied space in the pleural cavity; the elastic clot resulting, furnishing a styptic, par-excellence, for the wounded vessels of the yielding lung. 2d, *dyspnœa* is immediately relieved, upon removal of the atmospheric pressure, and the restoration of the parts approximately to their normal condition. The enclosed volume of air being absorbed, the lung is again at liberty to expand with its usual freedom, limited only in proportion to the size of the clot, which may happen to be in the pleural cavity. 3d, *Suppuration*, if not prevented, is greatly diminished by shutting out the constantly renewed currents of atmospheric air, and its character is very favorably modified. Indeed, if the wound were closed soon enough, I deem it possible that the slough of the track through the lung, with the limited amount of attendant pus, might be entirely disposed of

by absorption and expectoration. The operation which I practise, is by hermetically sealing, as follows:—All accessible foreign bodies having been removed, introduce the point of a sharp-pointed bistoury, perpendicularly to the surface, just beyond the contused portion, and with a sawing motion pare the entire circumference of the wound, converting it into a simple incised wound, of an elliptical form; dissect away all the injured parts down to the ribs; then bring the edges of the wound together with silver sutures, deeply inserted, and not more than a quarter of an inch apart; secure them by twisting the ends, which are then cut off short, and turned down out of the way. Carefully dry the surface, and with a camel's hair pencil, apply a free coating of collodion over the wound; let it dry, and repeat it at discretion. For greater security, shreds of charpie may now be arranged crosswise over the wound, after the manner of warp and woof; saturate it with collodion, and when dry, repeat the process until the wound is securely cemented over; as a still greater security, a dossil of lint may then be placed over the part, and retained with adhesive straps.

"If there be a tendency to undue heat in the part, it may be kept down with cold affusion; should any loosening of the dressing occur, an additional coating of collodion may be applied. The sutures must not be removed, until healing by *first intention* is complete. Should suppuration occur, so as to occasion distressing dyspnoea, proceed to treat it, in all respects, as a case of empyema, introducing the trochar at the most dependent point, and taking especial care to avoid the admission of air. In incised or punctured wounds, the paring process is, of course, dispensed with.

"Practically, the immediate results have been very remarkable, and, I think, unprecedented. The most painful cases of dyspnoea have been promptly relieved, the patient usually falling into a quiet slumber, in about an hour after the operation. I have obtained healing by first intention, and removed the sutures, within five (5) days after the operation. Some cases upon which I operated, were six days in the ambulances, before reaching a General Hospital, part of the road travelled being of the worst description; on the fifth day, all but one of these, so treated, were able to walk comfortably. On their arrival, all the wounds were unfortunately reopened, except where the union was too complete to allow of it, and the usual water dressing was substituted."

This treatment applies to penetrating wounds of the abdomen, as well as to those of the thorax. In fact, Dr. Howard's first experiment was in a case of bayonet wound of the abdomen, "which was followed by the best results."*

The abdominal cavity, from its large surface, and want of bony

* Since the above was written, I have been told by Army Surgeons who had tried the method proposed by Dr. Howard, that they had completely failed in obtaining the good results claimed by him.

protection, is very liable to receive injury in battle. And wounds of this part, are of the most dangerous character.

Contusions by round shot or shell, are among the most severe injuries to which the abdomen is exposed. The solid or hollow viscera may be ruptured thereby, and rapid death follow, with but little external appearance of so grave an accident. And even if not so severe as this, injuries of this sort are not uncommonly followed by extensive sloughing of the abdominal wall. If the amount of inflammation caused by contusion be limited, adhesion will be likely to take place between the parietes and the omentum, or viscera, and thus afford a great safeguard against the effusion of blood or other matters into the peritoneal cavity.

Vomiting and pain in the abdomen are the usual symptoms which contusions of this cavity give rise to. If any internal rupture has taken place, we can do very little to prevent a fatal issue. Otherwise, the treatment should be such as will ward off peritoneal inflammation, which may steal on very insidiously.

Penetrating wounds of the liver, kidneys or spleen are, as a rule, fatal; though many exceptions occur. Wounds of the stomach are also exceedingly fatal. Baudens (Observation iv. p. 12, of his "Clinique") records a remarkable case of recovery, though complicated with severe head injuries. Wounds of the small intestines are said to be much more serious, than those which injure the large.

The wonderful manner in which balls and swords may traverse the abdominal cavity, without wounding any of the viscera, has often been commented upon by military surgeons.

When a ball merely enters an intestine and lodges there, it may sometimes be thrown out by the rectum. Several such cases have been related in the *New York Medical Times*, during the present war.

If a vascular viscus or large artery have been wounded, hæmorrhage to a very serious, and even fatal extent, may take place within the cavity. The mutual pressure of the viscera, however, does much to prevent the former accident; and the slight attachment of the arteries generally enables them to escape.

Early protrusion of the intestine is rare, unless the wound be quite large. It should, of course, be immediately and carefully returned, when it does occur.*

The principal danger attending penetrating wounds of the bladder, arises from the infiltration of urine, either primarily or secondarily. If the bladder be full when struck, rapid death will be almost inevitable, on account of the infiltration of urine into the peritoneum. If, however, the bladder be empty, it becomes a matter of great importance to introduce a gum-elastic catheter, as early as possible, and let it remain, so that no accumulation of urine will be

* The treatment of such cases can only consist in absolute quiet—with the exhibition of opium, if necessary—and in sustaining the powers of life to the utmost. But they are very hopeless cases to treat.

possible. The catheter should be allowed to remain until we have reason to believe that the wound is *thoroughly* closed. Its presence will excite but little irritation, unless the neck of the bladder be injured.

If the ball have remained in the bladder, it becomes a matter of consequence to remove it. Balls and pieces of cloth or bone, so retained, have in many instances become the nuclei of calculi; so that the sooner they are removed the better. Demarquey mentions a case in which the nucleus was a piece of shell. Larrey operated, successfully, four days after the introduction of the ball into the bladder. In some cases, where the ball was small, it has been voided with the urine.

A case from one of the battles of the Peninsula, in the year 1862, came under my care (of which, unfortunately, I have lost the notes), where a soldier while stooping over, with his back to the enemy, received a ball about three fourths of an inch to the left of the anus. Upon examination, I found the ball in the bladder, and by merely enlarging the track of the ball, performed the lateral operation of lithotomy. He did excellently well, and was removed to one of the northern hospitals in about three weeks.

[To be continued.]

Reports of Medical Societies.

EXTRACTS FROM THE RECORDS OF THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. BY FRANCIS MINOT, M.D., SECRETARY.

FEB. 13th.—*Fracture of the Occipital Bone by a Bullet; Abscess of the Brain*—Dr. WARREN showed an occipital bone, with a fracture through both tables, caused by a Minié ball. On the inner surface were several fragments which had been driven inwards, with rough spicula, encroaching at least half an inch on the cavity of the cranium; on the outside was an indentation, corresponding in size and shape to the flattened ball, which was also exhibited. The specimen was sent by Dr. Wheeler, of Chelsea, with the following account of the case:—

"A Captain, 35 years of age, belonging to the 35th Regiment of Mass. Volunteers, in a movement with the 9th Army Corps, on the Weldon Railroad, near Petersburg, Va., in action on the 19th day of August (1864), received a wound of the scalp upon the back of the head, by a rifle-ball striking the occipital bone near the apex, and just within the lambdoidal suture of the right side. The immediate effect of the concussion caused him to fall, with a momentary loss of his eye-sight and faintness, but his consciousness was retained; in a few moments he was able to get up, and walked to the rear, where the ball was picked out from its bed under the scalp. No symptoms of compression were present, no fracture was then suspected, and the injury was recorded as a flesh wound. He was transferred to City Point, Va., and from thence to a general hospital near New York city,

where he remained, very comfortable, some eight or ten days. He was then furloughed, and arrived home (near Boston) on the first day of September following. He complained but little of his head, but said that it felt heavy at times, and that his eye-sight was not quite so good as usual, &c. &c. These symptoms did not confine him at home; he walked out, called to see some friends, and also attended in person to some business matters. The wound in the scalp was suppurating moderately, and was looking well. The day he arrived home a fissure and depression of bone were discovered to exist, but as no symptoms of compression or cerebral disturbance were present, it was thought that surgical interference was hardly called for. But about the 7th. of September, or some eighteen days after the date of the injury, he complained of a chill, which was followed by fever and pain in the back of the head. In a few hours slight delirium came on, showing the development of active inflammation within the cranium. The delirium, heat and other symptoms became more severe from day to day, finally ending in profound coma, with slight convulsions. He died on the 15th of September, just twenty-five days after the injury."

An autopsy exhibited a fracture of the occipital bone. In addition to the appearances mentioned above, "the dura mater gave signs of active inflammation in a circular spot of about two inches in diameter. It was not lacerated, was quite dark in color, and readily separated from the bone. Just beneath this portion of the membrane was found a well-defined abscess, containing about two ounces of pus, formed in the substance of the brain.

"The history or termination of this case, with but a glance at the bony specimen, will at once suggest the trephine and its early use as the best means to ward off inflammation and its consequences."

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, MARCH 2, 1865.

THE BOARD OF STATE CHARITIES.—In a recent number we called the attention of our readers to one of the causes of mortality in our State Almshouses, and to the inhuman practice of removing sick paupers, when in an unfit condition to leave their beds, from distant places to these institutions. Since then the Annual Report of the Board of State Charities has been published, as well as a special and subsequent report of the same body on the State Almshouse system. This Board was appointed by an act of 1863 "to investigate and supervise the whole system of the public charitable and correctional institutions of the Commonwealth," and was invested also with executive power. The character of the gentlemen appointed to perform these important, laborious and gratuitous services, of whom three were chosen by the Governor with his usual excellent judgment from the medical profession, was such as to ensure a searching and impartial investigation, and these documents, but just published as the first fruits of their labors, confirm the wisdom of the act. As might be expected, therefore, the

abuses, which we endeavored partially to expose in a former article, have been fully investigated by the Commissioners and placed before the Legislature for correction. They recommend that "provision be made by law, in the manner above mentioned, for the temporary relief of persons having no settlement in any town, without obliging them to go to the State Almshouse; that it shall be declared unlawful for any town or city to send a sick person to a State Almshouse or to Rainsford Island, without a previous examination by a physician, who shall certify that the sick person can, in his judgment, be safely transported to the place assigned; and that the Inspectors of State Almshouses be directed to see that the separation of families in their institutions is made no more complete than discipline requires."

It has for years been a vexed question how far the State Alms Institutions are to be considered hospitals, and there can be no doubt that reform and some definite and general system have long been needed in their management. The Commissioners have apparently given much attention to this part of their investigations, and offer the following recommendations, which, we trust, will receive the immediate action of the Legislature.

"There is another class at the almshouses who should have better accommodations than they now have. We refer to the sick. There are three radical defects in the provisions now made for this class. *First*, The rooms occupied by them cannot be properly ventilated; *Second*, There is no kitchen provided exclusively for hospital purposes; and, *Third*, Their apartments are too closely connected with rooms occupied by the other inmates.

"Such are the peculiar uses of a hospital that it should be entirely disconnected from other buildings. Besides, it should not be so open or exposed to other inmates as the hospitals are at Tewksbury and Bridgewater. In case any epidemic disease should break out, the present accommodations will not allow of that complete isolation which is so necessary for safety. What is needed is a plain, substantial building, one story high, well lighted and ventilated, with a kitchen attached; and located a short distance from the present almshouse building. A hospital built and furnished in a simple and cheap manner, similar to many now in use by the army, would answer every purpose. Such an arrangement would afford the sick a better chance to recover, and would make the situation of those outside of the hospital better.

"The number of sick at the three almshouse hospitals must have averaged during the past year at least 250. At the present time it is probably much larger, because the number of inmates is much increased during the winter months and the number of the sick increases in nearly the same proportion. It would not be possible to send all these sick persons to Rainsford Island, even if it were desirable, which we greatly doubt. So long as we have almshouses, each must have a hospital connected with it. Let these hospitals, then, be improved, and one of the great objections to the present system would be met. But we ought to go further, and provide that the dangerously ill shall be treated in the towns where they fall sick, instead of being sent off to the State Almshouse, when unfit to be moved, as is now sometimes done.

"Provision should also be made for a medical examination of all sick paupers before they are sent by overseers of the poor to any almshouse or hospital.

"There is another class of persons at the almshouses, viz., the insane, who should have separate accommodations; certainly a large portion of them.

"Their habits are such as wholly unfit them to associate with the rest of the paupers, or even to be where the children can see or hear them. Their wants, also, can be more easily and better supplied in separate apartments.

"Of the expediency of keeping this class of persons at the almshouses at all, there are some doubts, but at present it seems to be necessary to do so. They ought, however, to be better provided for, and to be kept apart, so far as practicable, from the sane inmates.

"Our recommendation of a building for incurable and harmless insane at Tewksbury, was made a year ago, in view of the pressing need of better provision for their comfort, as well as considerations of economy. Such a building would soon save to the State the cost of its erection, and would give the insane a far more comfortable home than they now have. As a temporary expedient we still recommend such a building, but we have already expressed our belief that the permanent interests of the State require something better.

"The number of these insane now at Tewksbury is about 150; at Bridgewater, about 125; in all, not far from 275. This number will naturally increase from year to year, unless the hospitals are left to be filled up with incurable cases.

"The greater the proportion of the insane at the almshouses, the greater will be the inconveniences resulting from their presence there; unless some steps are taken to improve the present arrangement for their care and support. * * * * *

"After providing for the insane and idiotic—the children—those taken ill in the institution and the sick who can be removed thither with comfort and humanity, all which can be done at a trifling expense, and as we believe at an actual saving to the State in future years, the simplest course would appear to be a return to the original intent of the institutions, with such classification as the present buildings will allow.

"Let the almshouses be reserved for the vagrant and friendless class of which we have spoken. Let the work of examination and removal be prosecuted there more vigorously than ever.

"Let overseers of the poor be forbidden by positive enactments, 1st, To send any applicant as a State pauper to a State almshouse or hospital who has any known settlement in the Commonwealth; 2d, To send thither any sick person, except with the certificate of a competent physician that the person is in a proper condition to be moved; 3d, To make any commitment which would break up a household or cause a separation of families, with provision for those exceptional cases of this kind which must of course occur.

"Let one of the institutions be set apart for the reception and treatment of those criminally diseased, who can properly be removed to it; and perhaps, if provision were made for their detention at hard work for a period lengthening with each commitment after the first—a system of labor might be introduced, which, as in other States,

would contribute largely toward the support of the establishment; at any rate, if the reform of these parties be impossible, they would for a time be withheld from doing injury to themselves or others, and compelled to make some remuneration to the community for the expense and loss they have occasioned.

"We believe that these changes, adopted and carried out in good faith, will put an end to the evils complained of, except those necessarily resulting from the aggregation of so much misery in one locality. These can never be wholly removed, but they may be greatly mitigated by the classification already recommended, and the good judgment and ingenuity of the superintendents."

A large portion of the Annual Report of the Board is devoted to the past and present condition of the Rainsford Island Hospital, an institution which has hitherto attracted the attention of the profession on account of the character of some of those who have been connected with its management. A long account of its history is given in the conjoined report of the Secretary of the Board, which certainly exposes great laxity at least on the part of nearly all who have been concerned in the administration of this public charity. We are happy to say, however, in justice to the present superintendent, that it was the unanimous opinion of the Board that the inmates were well cared for, and that two of its members, physicians of long practice, expressed their entire satisfaction with the treatment of the sick, with the exception of the employment of syphilitic inmate nurses. We have not the space to particularize in relation to the proceedings of the Board in this investigation. We can only give their general conclusions and suggestions, which certainly deserve the careful consideration of our profession.

"It will be seen by all who have done us the justice to read the above statement, that our action in the case of this institution was based on careful examinations and undisputed facts. Especial pains were taken to obtain a full knowledge of its past history and present state. The Island was repeatedly visited by different members of the Board, and accurate statistics as to the condition, character, and number of residents there, were collected. It was found that the number of patients requiring hospital treatment was relatively small; that more laborers and assistants were employed on the Island than seemed necessary; that the expenses, generally, of conducting this hospital were high, compared with those of other State institutions, and, as will be seen by referring to the tables in the Report of the Secretary, higher than those of similar hospitals in other States; and that for a long time there had been complaints of excessive, if not extravagant, expenditures at this island.

"It was in view of these facts, and under a deep sense of our responsibility to the State, that this Board proceeded to suggest and apply such remedies as the state of things seemed to demand. That we have only partially succeeded in correcting what we deemed wrong, is not our fault. We have prevented the expenditure of several thousands of dollars needlessly, though obliged to witness the equally needless expenditure of at least eight thousand dollars. For we believe now, as we stated to the Finance Committee of 1864, that \$12,000 would have been amply sufficient to maintain an average of sixty-one patients, which is the average number for the calendar year

1864. This would have allowed \$3.78 a week for each patient, which certainly is all that ought to have been paid. The actual cost of these patients has been \$20,050.70, or \$6.32 a week.

"We are satisfied that the appropriations to the support of this hospital are not expended in a way to do the most good. Nor have we any reason to believe that, as the hospital is now managed, there will be any change in this respect for the better. The location of the Island is such as to render communication with it both difficult and expensive, especially in the winter season, and prevents that frequent visitation and watchful oversight on the part of Inspectors and other guardians, which is found so necessary in all our public institutions.

"Again, the buildings at Rainsford Island, with the exception of the Female Hospital, are not well adapted for hospital purposes. The present number of paupers, to say nothing of a larger number, will not, probably, long be comfortably provided for on the Island without heavy expenditures in the erection of new buildings. Then there is comparatively little land on the Island that can be cultivated for garden or other purposes. The establishment can derive no advantages from this source, either by improving the health of its inmates, or from useful articles raised for consumption. Everything consumed on the Island must be bought and conveyed to it, however difficult or expensive may be the means of transportation. On the other hand, the Island is peculiarly adapted for quarantine purposes. Such is its location and isolation as to render it a fit place for the treatment of contagious and infectious diseases, like the yellow fever, the ship-fever and the smallpox.

"An appropriation of five thousand dollars a year would keep the buildings in good order for quarantine purposes, maintain an ample supply of beds for any emergency, and support a small family to reside there, and take care of the property and the patients. We do not offer this as our definite recommendation, but as one of the measures proposed in former years, and worthy of consideration by the Legislature.

"It has been proposed, also, that the sick poor applying for aid in Boston, should be carried to Deer Island, and accommodated in the hospital connected with the city institutions. Here they would be associated with patients of the same grade and character as themselves, and receive the same treatment as the sick paupers of Boston, while the expense at Deer Island would be much less than it has lately been at Rainsford Island. The city of Boston might in this way support all the poor who would by law be sent to Rainsford, for no greater cost than her present proportion of the sums paid by the State at Rainsford.

"Again, it has been proposed to make this hospital an appendage to the Massachusetts General Hospital, to which a class of patients now excluded might be sent; it would also relieve that institution when crowded, and accommodate patients who might be benefited by the sea air. If this were done, the State might arrange to pay so much per week for any patients it might be thought best to send there.

"Another proposition is to make such changes at Rainsford Island as shall secure a small and genuine hospital there; to employ trained nurses, receive none but hospital cases, require the Superintendent to provide for his own household expenses out of his salary, which should

be increased for the purpose; and make provision for a careful oversight of the institution by a board of medical inspectors, whose other duties would not interfere with the inspection of the hospital. There is reason to believe that such a hospital would not cost the State above \$12,000 a year, if economically managed.

"Finally, it has been proposed to discontinue the hospital at Rainsford Island entirely, send the sick State paupers to the almshouse hospitals and to Deer Island, and make use of the property at Rainsford for other public purposes.

"Any one of these plans, in our opinion, would be better than the present arrangement, by which the State pays an indefinite sum for the support of an institution which, at best, is a mixture of hospital and almshouse. We commend them all to the consideration of the Legislature, without offering any opinion as to their comparative merits."

DR. J. B. S. JACKSON has withdrawn from the Board of Visiting Physicians of the Massachusetts General Hospital, of which for twenty-five years he has been so valuable and respected a member. In accepting his resignation, at a recent meeting, the Trustees unanimously adopted the following resolution:—

"Resolved, That the official services of Dr. Jackson as House Apothecary, Assistant and Admitting Physician, and Visiting Physician in this Hospital, extending, as they do, through a period of thirty-one years, twenty-five of which have been devoted to the important duties of the latter office, deserve and should receive the grateful acknowledgments of the Board and of this community; and in accepting the resignation of his present official position, the Trustees desire to bear their testimony to the punctuality, precision, skill and thorough fidelity with which all its requirements have been discharged, and to extend to him their best wishes for his future health and welfare."

At the last regular meeting of the Trustees, Dr. S. L. Abbot, late Physician to Out-patients, was chosen Visiting Physician to fill the vacancy caused by the resignation of Dr. Jackson, and Dr. J. C. White was elected Physician to Out-patients.

At the annual meeting of the New York State Medical Society, the following resolutions relative to the propriety of medical practitioners advertising their specialty in medical or other journals were passed:

"Resolved, That in the opinion of this Society it is impossible to define the limits of medical specialties, either in medical or other journals.

"Resolved, That advertisements indicating location and residence, are the utmost limits of self-announcements, consistent with professional dignity; and that all reference to special branches of medical practice, as extra inducements to patronage, should be deemed violations of the Code of Medical Ethics.

"Resolved, That hereafter any medical practitioner so offending shall be deemed disqualified as delegate to or for membership of this Society, and if already a delegate to, or a member thereof, shall be deemed a fit subject for discipline.

"Resolved, That this Society recommends all Medical Societies in

the State of New York to adopt the foregoing resolutions, with a view to establish the true dignity of our profession.

"Resolved, That the foregoing resolutions be transmitted to the American Medical Association at its next meeting, as an expression of the opinion of the Medical Society of the State of New York, and that for this purpose a committee of presentation be appointed."

MASSACHUSETTS MEDICAL COLLEGE.—The Annual Commencement for the conferring of medical degrees will take place at the College on Wednesday, March 8th. The exercises will commence at 11½ o'clock, A.M., with a prayer by Prof. Andrew P. Peabody, D.D., LL.D., after which graduates will read selections from their dissertations. The degrees will then be conferred by the President, Rev. Thomas Hill, D.D., LL.D., who will conclude the exercises with an address.

The Corporation and Board of Overseers of the University will be present on the occasion, and the Fellows of the Massachusetts Medical Society, all medical students, and all persons who may be interested in medical science, are hereby respectfully invited to be present.

GEORGE C. SHATTUCK, M.D.,

Wednesday, March 1, 1865.

Dean of the Medical Faculty.

SCARLET FEVER IN THE LOWER ANIMALS.—It is well known that the lower animals are liable to most, if not all, of the infectious and miasmatic diseases which affect man. The occurrence of scarlet fever in dogs, cats, horses, swine and other animals, is attested by many excellent observers. Many years ago, Heim, of Berlin, reported a case where a dog, after lying in a bed occupied by an infant suffering from scarlet fever, was seized with febrile symptoms, followed by marked desquamation of the skin. Most inoculated three dogs with the fluid taken from the vesicles of scarlet fever. The inoculation was made on the abdomen, where the skin was thin, and not furnished with much hair. At the end of eight days a scarlet eruption appeared on one of the dogs, in patches the size of the hand. This eruption was followed by universal desquamation, and the falling off of the hairs here and there. No difficulty in swallowing was observed. In the memoirs of the Medical Society of St. Petersburg, the case is recorded of a cat which presented both the characteristic eruption and the throat affection of scarlet fever. A disease corresponding in every respect to scarlet fever is far from uncommon in the horse. It is characterized by fever, a bright scarlet eruption on the Schneiderian membrane and the lining membrane of the mouth, sore-throat, discharge from the nostrils, and enlargement of the parotid glands; and it is followed by loss of hair, and occasionally by dropsy. Numerous references to this disease exist in the journals of veterinary medicine. About a year ago Dr. Letheby reported on the frequent occurrence of scarlet fever among pigs in the city of London. In a letter with which he has favored me on the subject he says: "My attention was directed to it by the remarkable appearance of the skin of the dead animals seized in the city markets; and on inquiry I found that the pigs were attacked very suddenly. They could not eat, as if the throat was bad; and they became very feverish. The skin acquir-

ed an intense red color—deeper than the red shell of a boiled lobster; and the animals died comatose in a few days, and sometimes in a few hours after the attack. I found the kidneys congested; the urine albuminous; and once or twice I observed petechial markings on the valves of the heart. I regarded the disease as a malignant form of scarlet fever."

It would not be difficult to multiply facts like those now referred to; so that there can be but little doubt that scarlet fever, like smallpox, attacks the lower animals as well as man. Indeed it is not impossible, as already suggested, that man may have derived the disease in the first instance from the brute creation; and at all events it is reasonable to hope that researches in the direction now indicated may lead to a discovery productive of as great benefits to the human race as that of vaccination.—DR. CHARLES MURCHISON in *Lond. Lancet*.

PROF. GREENE, of Berkshire Medical College, has recently removed an ovarian tumor from a lady in Vermont, weighing 26 lbs., with perfect success, the patient making a good recovery.

A hospital, capable of accommodating 1000 patients, has been organized in Nashville, Tenn., for sick and wounded colored soldiers. It is in charge of Dr. Ira Russell, recently Post Surgeon at Benton Barracks, Mo., and formerly Surgeon of the 11th Mass. Vols.

The smallpox is prevailing in New Haven to quite a serious extent. The disease generally assumes the milder form of varioloid.

The number of births in Hartford, Conn., last year was 758; the number of deaths, 513. Of those deceased, the ages are thus classed:—Under one year, 112; one year to five, 87; five to ten, 26; ten to twenty, 29; twenty to thirty, 68; thirty to forty, 52; forty to fifty, 33; fifty to sixty, 40; sixty to seventy, 36; seventy to eighty, 16; eighty to ninety, 10; ninety to one hundred, 2; age not stated, 2. Seventy-one of the deaths were caused by consumption, and 17 by varioloid and smallpox.

VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, FEBRUARY 25th, 1865.

DEATHS.

	Males.	Females.	Total.
Deaths during the week	45	49	94
Ave. mortality of corresponding weeks for ten years, 1853—1863,	41.7	39.8	81.5
Average corrected to increased population	00	00	89.16
Death of persons above 90	0	1	1

MARRIED.—At Barnsville, Montgomery Co., Md., Jan. 12th, Dr. E. M. Johnson, of Feeding Hills, Mass., Surgeon of 2d Mass. Cavalry, to Miss Fannie Hempstone, of the former place.

DEATHS IN BOSTON for the week ending Saturday noon, Feb. 25th, 64. Males, 45—Females, 49.—Accident, 2—Inflammation of the bowels, 1—disease of the brain, 4—bronchitis, 2—cholera infantum, 2—consumption, 12—convulsions, 4—croup, 2—cyanosis, 1—diarrhoea, 1—dropsy, 1—dropsy of the brain, 4—drowned, 1—epilepsy, 1—epistaxis, 1—scarlet fever, 4—gangrene, 1—gastritis, 2—hemorrhage, 1—disease of the heart, 3—disease of the hip, 1—homicide, 1—infantile disease, 3—jaundice, 1—disease of the kidneys, 3—congestion of the lungs, 2—Inflammation of the lungs, 5—marasmus, 1—measles, 1—old age, 5—paralysis, 1—peritonitis, 1—pleurisy, 1—premature birth, 3—puerperal disease, 1—smallpox, 2—teething, 1—tumor, 1—unknown, 7—whooping cough, 3.

Under 5 years of age, 43—between 5 and 20 years, 8—between 20 and 40 years, 17—between 40 and 60 years, 5—above 60 years, 21. Born in the United States, 71—Ireland, 16—other places, 7.